

THE QUARTERLY MAGAZINE OF THE NATURAL
HISTORY MUSEUM OF LOS ANGELES COUNTY
VOL. 11/NO. 1 SUMMER 1972

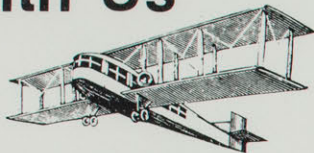
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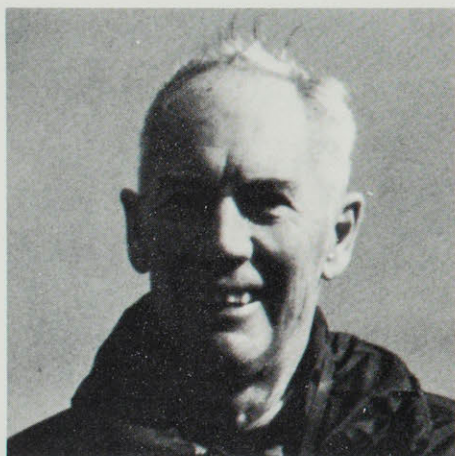
Come Fly with Us



Have an eagle's-eye view of the magnificent Southwest. Come on the Museum Alliance Fly-Over on an early November Saturday afternoon, a low-flying, sharp-eyed view of the great, colorful geologic wonders of the Southwest. Our veteran pilot will fly our 727 from Los Angeles over Lake Havasu and Hoover Dam to the Grand Canyon, Lake Powell, Rainbow Bridge, over Monument Valley, Bryce Canyon and Zion, Death Valley, and, after circling Mt. Whitney, will cross the San Andreas fault before returning to Los Angeles. Our flight has a fine leader in Dr. Harry Walker, Associate Dean of the College of Agriculture and Environmental Sciences at U.C. Davis; he has led similar flights for the University for five years. Watch your Museum calendar for details; \$55 per person; make reservations (limit of 130) after September first.

Alliance at Sea

by William W. Drewry, Jr.



Thirty intrepid members of the Alliance joined the migration of the California gray whale to Scammon's Lagoon in Baja California this past January. They were accompanied by two Natural History Museum of Los Angeles County staff members, Kenneth Stager and Gretchen Sibley, and Dr. Ray Gilmore of the San Diego Natural History Museum, an authority on the gray whale.

The first view of our ship, the Qualifier

105, relieved any doubts concerning our comfort or safety for the next seven days. The Qualifier 105 is a 105-foot all aluminum luxury fishing vessel, well cared for by her capable captain, Robert Barnes, crew of four friendly young men, and a talented cook.

Departure time, and soon San Diego's beautiful skyline disappeared behind the surging white wake of the three powerful diesel engines. Moving into the sunset, we were soon past the rugged rocky Coronados. Now members began to get acquainted, not only with each other, but with the new routine which was about to be thrust upon us. Early to bed and earlier to rise!

By dawn the first morning we were approaching our first forbidding view of Guadalupe Island. During the morning we cruised close to the rocky shore, spotting fur-bearing seals and the first of several elephant seal herds. As we neared the largest of these groups, we were treated to the spectacle of a bloody battle between two huge bulls over possession of a seemingly disinterested harem.

Shore parties viewed the old penal colony's barracks and became acquainted with the elephant seals at close range—obtaining portraits, but no autographs. Fishing on board that day with live bait carried in the ship's tanks resulted in two yellowtail and numerous sea bass. There seemed always to be a fisherman or two at the rail.

Weighing anchor in the evening, we arrived at San Benito the next morning where our captain bartered for the lobsters which resulted in a memorable dinner for us all. The landing shore parties to this island were greeted by a group of harbor seals. They surrounded the boats looking for handouts that they were used to receiving from the local fishermen living in the colorful shacks on the island.

Bird watching parties toured the island spotting osprey, flocks of brant and numerous other shore birds. It was here that Ken Stager first proved that he could produce a bird out of what looked like a gopher hole. These were gannets, docile little birds during the daytime that changed character at sundown.

Those up for the following dawn watched our crossing the bar at the mouth of Scammon's Lagoon. The cry of "Whale Ho" became frequent and almost everyone became a camera man.

Sighting the whales was as exciting an experience as anticipated. It was

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PSYCHEDELIC SLUGS

by Gale G. Sphon

Nudibranchs are some of the most vividly colored and bizarrely formed creatures to be found in the sea. Although they are often called "Sea Slugs," this common name is very unfortunate. Nudibranchs are related to the common garden slug, but there is a great deal of difference between them. Both creatures belong to the phylum Mollusca which is the second largest group of animals. The phylum also includes such diverse animals as clams, snails, octopi and squid. The common garden slug, a dull, drab, unlovely creature, has very little variation in shape, size or color.

A primary difference between nudibranchs (the name means "naked gills") and true slugs is their breathing apparatus. The garden slug belongs to a group called Pulmonata ("little lungs") and the members of this group have some type of lung, most are terrestrial; however, a few live in fresh, brackish or salt water. The nudibranchs do not have a lung but breathe either by means of oxygen absorbing processes on the body called *cerrata*, or extract oxygen from the surrounding medium directly through the skin. Further, *all* nudibranchs are marine, none of the many hundreds of species are known to live on land or in fresh water.

While nudibranchs live in a variety of marine habitats, only a few live on sandy bottoms. The rocky areas, however, abound with many species and as a general rule each of these is found in its own ecological niche, be it under a rock where a particular type of bryozoan (a "moss-animal") occurs, or on a frond of kelp off-shore. Nudibranchs are cosmopolitan in distribution. They have been found off-shore under the ice in Antarctica and have been known to live in water that sometimes reaches 100° F. in the Gulf of Aden. These, of course, are the extremes. The majority of species are adapted to tropical and subtropical waters. Not only does there seem to be little restriction to their north-south distribution or to their temperature tolerance, but also their bathymetric range varies as well. They inhabit shallow in-

tertidal areas down to depths of at least 2½ miles.

A different type of diversity—and probably the most spectacular—is their color and form. There are probably no two natural colors that do not occur in combination on some species of nudibranch. The shape can vary from a rather flat, unspectacular blob, to a florid figure with many appendages (*cerrata*) in the shape of frills or spikes. As a general rule, the simpler the body form, the more drab the color. This progresses to the point where bizarre forms with weird combinations of color look as if they had slithered out of someone's worst nightmare!

Nudibranchs are hermaphroditic. This means that each individual has both male and female reproductive organs. One individual cannot fertilize itself, however. (It is wrong to refer to a nudibranch as "him" or "her"; try "it.") Usually two specimens fertilize each other at the same time. Often the eggs are laid in a flat, clock-wise spiral, and sometimes this finished mass of eggs looks like a peony in full flower. Often the rosettes of eggs are colored the same hue as the animal that deposited them.

At some point in their life cycles, most nudibranchs have a shell, revealing their true relationship to the other mollusks. Generally the shell is present during the larval stage when the uninitiated person, and often the biologist who should know, would not recognize them as nudibranchs. The shell is lost when the animal settles to the substrate and begins to metamorphose into its adult form.

These animals are occasionally very restrictive in their diet. Some will feed only on bryozoans, and even on a single particular species. Others feed on sponges, and still others on coelenterates. Coelenterates ("hollow-bodied" animals) are a group of animals that usually have nematocysts or stinging cells in their tentacles. By some process, still unknown even after a great deal of study in the last few years, these stinging cells are transferred from the coelenterate, through the tissues of the nudibranch,

to the tips of its appendages. What is even more remarkable is that the nudibranch can "fire" these stinging cells at will. When these stinging cells, which could be described as microscopic harpoons, are "fired" there is generally great agitation and waving of the appendages. After a stinging cell has been fired it is replaced by a different one which itself is ready to be released.

Not only do the animals themselves vary, but so do the kinds of people who work with them. Ordinarily, these are museum workers or college professors, but like the animals they work with, there are exceptions: A young priest in Berkeley has named several species new to science. One of the world's authorities on the group is a woman who came from Germany in 1938 and has lived for many years in São Paulo, Brazil. She used to assist her husband in his work and has carried it on since his death. Our most famous worker in the field is Emperor Hirohito of Japan. Not only has he encouraged research on nudibranchs, but has done a good bit of it himself.

The only way really to collect nudibranchs is with a camera, even though it is often a very trying, expensive, and time-consuming ordeal. Preserved specimens are very unsatisfactory, as they contract until almost unrecognizable in the preserving solution. Sometimes it is possible to get the animal to relax before preserving it, but not always. Also, the color fades almost immediately until there is nothing but an unappetizing brown or dull grey mass of protoplasm in the bottom of the container. While specimens, even in this condition, are of use to specialists for dissection and classification, slides or color photographs are usually relied upon for their identification. The best advice that can be given to the amateur about collecting nudibranchs is: DON'T! Go to the beach and poke around in the tide pools; see these animals in their natural environment (it's better than any aquarium); and watch their movements (some of them can actually swim); but don't collect! Why ruin a delightful memory or tale about a gorgeous (or weird) sea creature and then spoil it by showing, or looking at, the nasty-brown mess in the bottom of a jar? Let's all play "fisherman" and tell about the one we didn't bring back!

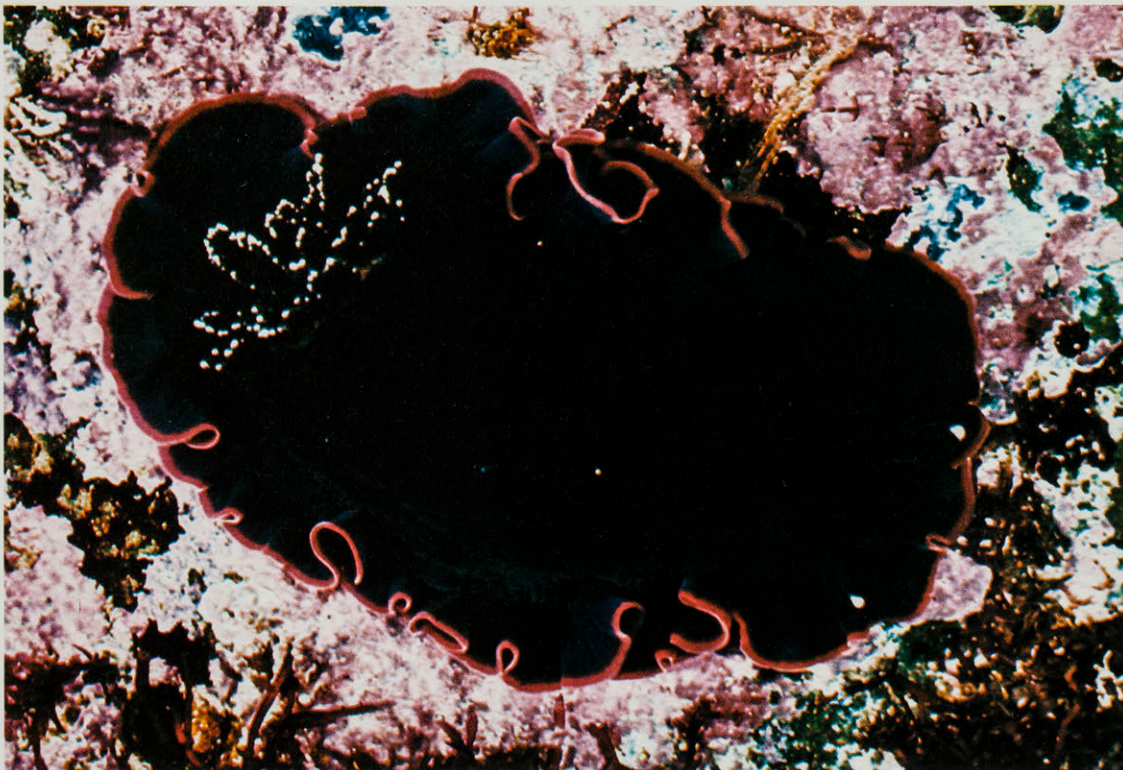
Gale Sphon is a curatorial assistant in invertebrate zoology at the Natural History Museum of Los Angeles County. This is his first Terra article.

Flabellinopsis iodinea (Cooper, 1862)

A common intertidal California species, *F. iodinea* sometimes reach four inches in length. By touching the head and tail, it can propel itself through the water.



PSUCHOCHELIC SLUGS



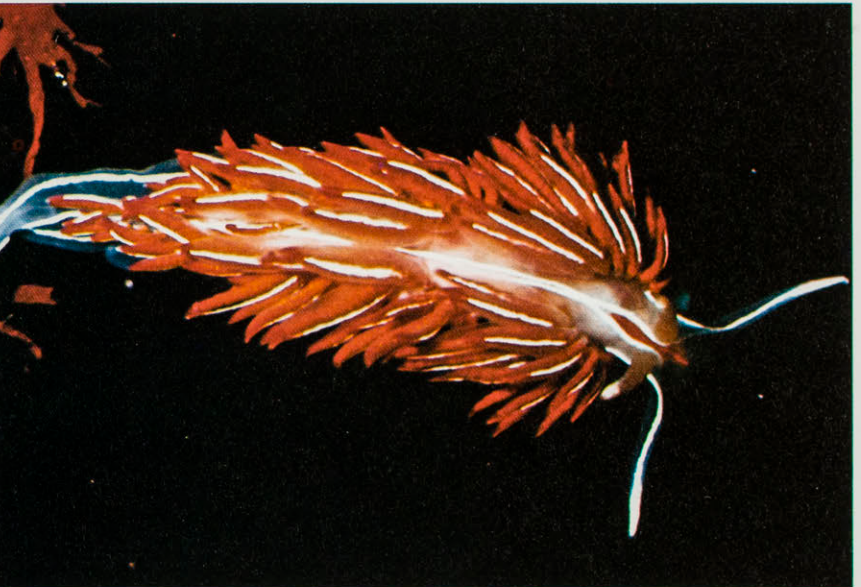
Dendrodoris krebbsi (Mörch, 1863)

This species, common in the Gulf of California, is also found in the Caribbean, but the color is grey or whitish and not the solid black with a red border of the Pacific form.



Chromodoris banksi Farmer, 1963

One of the more colorful species from the Gulf of California, *C. banksi* sometimes reaches three inches in length.



Hermissenda crassicornis (Eschscholt, 1831)

Truly one of the most common species of nudibranchs in the eastern Pacific, it is found from Alaska to the Gulf of California. The color form shown here is typical of that found in the northern part of its range.

Armina californica (Cooper, 1862)

This is one of the few nudibranchs that live in sand. In the shallower waters off the Pacific coast it feeds on the Sea Pansy (a coelenterate).

Photographs by David K. Mulliner



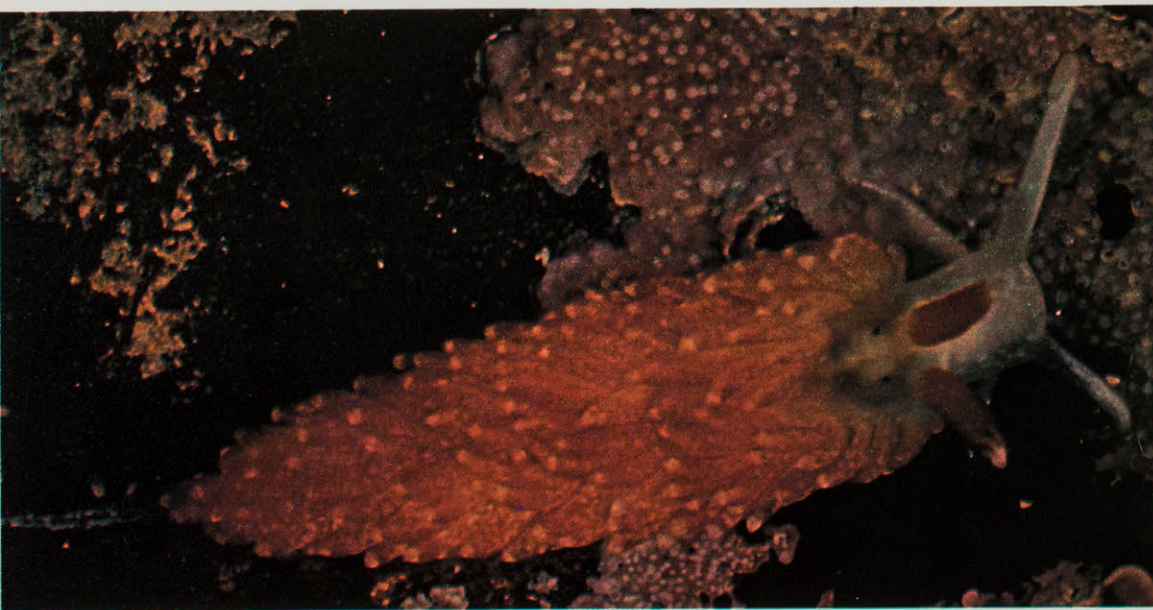
Hopkinsia rosacea
(MacFarland, 1905)

One of California's most beautiful nudibranchs, *H. rosacea* sometimes gets to be an inch and a half in length. It is occasionally quite common in the intertidal regions of southern California.



Antiopella barbarensis (Cooper, 1863)

Antiopella barbarensis is extremely common on the Pacific coast from late July to early September, but is quite scarce during most of the year.



Spurilla chromosoma
(Cockerell and Eliot, 1905)

Found on the Pacific coast from central California to central Mexico, *S. chromosoma* is about an inch and a half in length. It occurs in a variety of shades from orange (shown here) to pale pink.

Chichicastenango

Mayan Market Soft Sell

by

Dorothy Halle Seligman

This is not a tourist guide to Guatemalan markets, although Guatemalan textiles are treasured by shoppers and museums alike. Nor does it aim to imitate the anthropologist and delve into the reasons markets have been so important to cultures throughout world history. It is an attempt to observe together a native Guatemalan market, and wonder at its brilliance, its uniqueness and its sturdy refusal to become more than a token sideshow for tourists.

Inherent in this is the nature of the Guatemalan Indians, who make up fifty percent of the country's 5,000,000 population, and who are indigenous, pure descendants of different Indian tribes, principally of the Mayan race. These Indians are a proud and beautiful people; they are also poor, diseased, and incredibly hardworking. They live in village communities that preserve the customs and costumes of their ancestors. Weaving is a part of their heritage and their dress is gay and colorful, bright with hand embroidery, much of which is related to old Maya symbolism. In no two villages do people dress alike; consequently their clothes serve as badges of village identification.

For centuries the center of Indian social life has been the market, which the entire family attends together. There are

some Indians who live as market vendors, taking their portable stalls from town to town. But it is estimated that the average Indian family goes to market as a social event twice a month.

Unlike the non-whites in the United States and many other countries, the Indians do not wish to be integrated into the mainstream of life in modern Guatemala. They have fought to keep their own identity and traditions alive; as they have been forced out of their rich banana and coffee lands into the poorer highlands they have carried their traditions with them. They have spurned desegregated schools, demanding the separation that will uphold their heritage.

And the market has been particularly the Indian's own. There was a time when the tourist was ignored, except as a curiosity, in the native market. He happily soaked up local color and snapped his pictures as the Indians conducted their own business. Then eager shoppers persuaded some Indians to sell the beautiful clothes off their backs. Children were given coins to pose for pictures, or simply for smiling. And the corruption began.

Today at many markets children, hands outstretched for coins, hop about tourists like so many crickets, chanting, "Takeapitch, takeapitch, takeapitch!"

There is generally a "tourist row," laden with handwoven goods made especially for the foreigner. These seem less well-made than the Indian's own costume, with a noticeable corruption of style, often including an amalgam of designs from several villages. The Peace Corps is at work with Indian weavers to help them enter the mass market for export as a source of revenue.

And yet, even with these encroachments, the native market remains the social core of Indian life, essentially their own thing.

And so come with me. It is five o'clock on a Thursday morning in the mountain village of Chichicastenango. We have arisen and donned wool pants and heavy sweater to watch the Indians coming from all directions out of the surrounding hills to set up their market in the small town square.

At sunrise the Indians began to arrive, pattering quietly up the cobblestone hills to the market square, emerging from the purple shadows into the buttery sunlight of the village dawn. The men bent under loads of pots, lumber, furniture and miscellaneous goods on their backs, using a tumpline around the head to support the bundle or carrying rack. Women carried bundles or large baskets filled with flowers, fruit, vegetables or live chickens on their heads. They moved with little

mincing steps on feet as tough as bone.

They came alone. They came in twos. They came in clusters. Families with donkeys helping to carry their loads were the rich ones. Many of them, mostly women, wore the native, brightly-patterned, woven costumes of their forebears. This consisted of a loose blouse (huipil); a skirt (refajo) wrapped tight or gathered, with a belt (faja) wrapped around the waist. Others wore modern clothes, men in cotton pants and shirts, women in faded cottens, with an intricately-woven cinta or headcloth worn carelessly as addenda.

Babies jounced in shawls (perrajes) on mothers' backs, wool caps a streak against the pattern.

As the sun rose higher Indians began streaming in from all directions, like ants approaching a feast. And everywhere there was silence, broken only by the occasional clack of donkeys' hooves on the cobblestones, the eager call of the roosters, and the rustle of goods being set out in market stalls. An empty space became a stall in a matter of minutes, with canvas balanced on long poles frequently carried up and down the hills to market by small children. A man with some 150 pounds of pots on his back arrived at his destination, squatted, and was relieved of his load by a friend, appearing from nowhere. Not a word was spoken between them. Economy of motion indicated the length of their relationship.

It was cold and small children coughed and rubbed their hands together, occasionally wiping them across runny noses. If smiled upon they ducked a head into mother's skirt or issued a velvet smile in return.

The vegetable and fruit stalls were laid out upon the ground. Scarlet fleshy tomatoes, plump radishes, deep coral flesh of the mamey fruit, yellow and green mangoes, the common mingled with the exotic and stimulated the foreign eye.

The vegetable vendors had come the farthest distance, some 37 kilometers, and had started out from the dark of their small village before 4 a.m. As the men and women squatted over their small caches of produce, it was apparent that the hardships of the long walk were overcome by the pleasures of visiting.

By midmorning there were at least 3000 Indians crammed happily into the small square, flanked by two churches, one of them the colonial church, Santo Tomas, built in 1540 by the Dominican Order. Yet the noise level had not increased appreciably since dawn. The

only sounds that had been added were the low cadences of bargaining and the occasional wails of hungry babies. The latter were soon silenced at their mothers' breasts.

Down the center of the square ran the stalls displaying weaving; these catered to the numerous tourists who came to the colorful Thursday and Sunday market. A recurrent theme on the Indian weaving is that of copulating antlered deer. Evidently feeling that a picture serves better than words, an Indian will weave the sex act of animals into his tapestries and then people the borders with progeny . . . and the story of procreation is told.

Around the market was a profusion of flowers and their fragrance mingled with the exotic odor of incense and the herbs used to spice Guatemalan dishes being prepared for lunch. From counters, stalls and booths, bargaining went on for furniture, pottery, handwoven blankets and leather goods. And for the Indians, not the tourist, were stalls of cheap tin and plastic imported goods from Japan and Germany, dishes, mirrors, scissors, combs, cooking pots, sieves and the like.

Limestone merchants sat on their haunches over bundles of the powdery white rocks. When pulverized, they were used for two purposes, to add to the corn flour when making tortillas, and as an additive to milk in painting their houses. For the Indian house is always white-washed and is distinctive from the mestizo (mixed blood Spanish and Indian who make up most of the rest of Guatemala's population) whose dwelling always has color.

Around the corner at the pig market where the odor was more pungent and less exotic, a group of men watched two others gently bargain. A time went by when nothing seemed to happen. Then, when the transaction was finally completed, the pig was laid on the ground, held, and a stick was put in its mouth, pressing against the tongue, so that the purchaser could be sure the pig did not have trichinosis.

On the steps of both churches the air was heavy with smoke from the burning of copal candles to Indian gods. Flower petals lay bruised, having been offerings to the gods later trod upon.

Infants in miniature costumes waited with parents in the church for baptism in the name of a Christian God. Inside the smoke-clouded Santo Tomas the rafters were black with the residue of thousands of Indian prayers. In the aisles clusters of Indians knelt around sections

of floor measured off in approximately 40-inch squares, on which candles sputtered in the haze and flower petals made designs of their own. An elderly Indian padded from square to square with a water bucket and whisk broom. He wet his broom and wiped those areas which worshippers had left, and picked up still-burning candles and sizzled them out in the bucket.

At the altar the newly-married begged God, with offerings of flower petals and candles, to bless their union with peace and children. With much gesticulation, another supplicant argued with God.

Outside, on the steps below the pagan prayers, sat the poor, those who could not get work, amid their bundles of wood. These were given permission to go and cut the wood on communal lands, and they sold their day's labor for 25 to 50 centavos.

Tourists wandered in and out among the stalls but this market was not really for them. Perhaps that is why it held so much fascination. As tourists sauntered by, Indian babies' faces were carefully protected from both white and mestizo, who may carry the evil eye. The babies are guarded until about one year old, when they are given amulets to wear on their arms as antidotes to the evil eye.

One glanced at the meager belongings of a family, carried here on a man's back, and then one looked at the people themselves. They are small in stature, yet they stand straight. If one smiled at them, they smiled shyly back. A child swung a lasso at his mother and she laughed softly as she shooed him away. Another child, playing at pushing a small spool in the dirt with a forked stick, chortled as the spool spun along the road, and readily turned the toy over to a friend for a turn. Two men clasped hands and grinned as a transaction, probably involving barter and not money, was consummated.

The noon bells began to ring in the church belfry. Men doffed their hats to the new day, which began with the afternoon. Perhaps they were thinking about Heaven, which they envision as a place where they will work. But their religion tells them that the work will be under ideal conditions, proper amounts of sun and rain, no mestizo horses to trample their corn. (Indian farms have no fences.) And there will be no white men in the Indian Heaven to spoil it for them.

Dorothy Halle Seligman has been a news reporter, publicity writer and magazine editor. She is the author of two recently published children's books and has been editor of this magazine for seven years.



At dawn, burning incense to pagan gods.



Indians are climbing the last hill on their way to market.



She emerges from the shadows into the buttery sunlight.



A flower seller passes by.



By noon some 3000 people were in the small square.



Vegetable vendors.



The story of procreation told in weaving.

Chichicastenango

photos by Dorothy H. Seligman

Inside the church Indians burned candles on small square sections in the aisles.

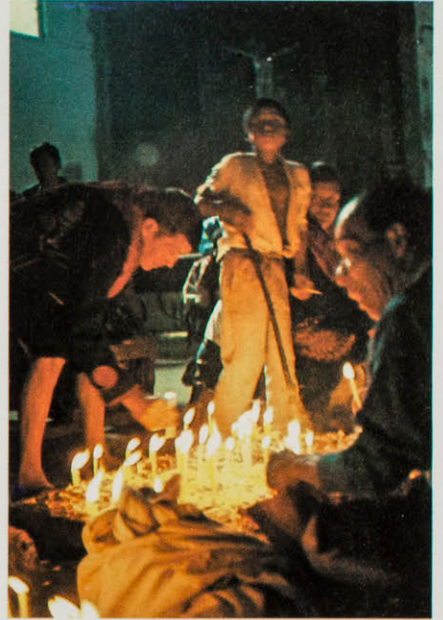


photo by Joseph Westheimer



The sun is momentarily obscured by the haze of incense smoke on the steps of the church.



They came alone. Notice
Tumpline around head.



They came in twos, incredibly
laden.

They came in clusters.



Chichicastenango



A friend helps a vendor remove
his heavy load.



At the pig market you'd never know those two seated men were bargaining.



The poor, out-of-work Indians waiting patiently to sell their loads of wood.



A mother packs to go home as her baby sleeps, oblivious.

Those empty corn husks behind the little girl are used for animal fodder.



13



Even small children shouldered a burden.

FLIPPERS AND FLUKES

An account of the first whale trip planned for the Alliance members of the Natural History Museum of Los Angeles County, led by Dr. Raymond Gilmore, Dr. Kenneth Stager and Miss Gretchen Sibley.

by **Gretchen Sibley**

"Last call for breakfast!" And four people sleepily scrambled out of bed into utter chaos. It was in a "stateroom" in a deluxe fishing boat, complete with a two by six foot space walled in with six bunks and a wash stand. It would take a few hours for four cheerful people to organize the clutter of clothes, books, collecting gear and the variety of articles four inexperienced women felt necessary for a week of whale-watching and island-hopping. Such coziness might result in a number of situations, but this time it was to be continuing friendship!

The first Museum Alliance trip following the California gray whale to the seclusion of Scammon's Lagoon was to reveal not only the intimacies of the family life of the whale, but it would offer unique experiences with elephant seals and other marine mammals as well as water birds, plants and an array of marine invertebrates.

It was early in the morning and the

steep brown sides of the volcano of Guadalupe Island stretched up into the clouds while a rainbow dipped into the sea. At the water's edge the lava had broken away to reveal flow after flow of hardened lava in grays and reds and browns; small green plants hugged the surface. Lava bores appeared on the cliffs and made caves along the shore for fur seals and elephant seals to rest.

White guano dripped from craggy rocks where gulls, finches and wrens nested and found protection from the strong winds that swept across the water and up the sides of the volcano. In small skiffs it was possible to travel close to the elephant seals and sea lions to watch their quiet, peaceful and graceful movements in the water. On land the picture changed. Hundreds of elephant seals gathered on a long narrow strip of beach below a high cliff. Two males, face to face, drove large pointed teeth into each other's neck and chest. Blood trickled

out of the gashes covering half the body. It was a fight to dominate the harem and would continue until one gave in. This was the breeding season and we walked on the water-worn rocks to visit the animals, picking our way carefully around the bodies of dead young and live cantankerous seals. The air was filled with the odors of decaying flesh and excreta. Brownish-gray bodies lay flat on the rocks or on top of other brown bodies. Here and there a flipper threw sand over a back and large tears washed the beautiful brown eyes and flowed down over the face. All eyes followed our movements, for there were young to protect. Though one wondered how much protection, as huge beasts crawled over unprotected babies, who bawled loudly to little avail. And sometimes a nearby female would take a youngster's head in her mouth and bite down on it, sometimes to crush it. Half the young on the beach were dead, yet enough survived



Young elephant seal nursing
note the flippers on both



Father elephant seal resting
after battle



Male elephant seal showing
enlarged nose



Young elephant seal, weaned
and living off his fat

to keep a healthy and growing population on Guadalupe Island, a Mexican animal reserve.

The air was also filled with sound—bawling babies, angry females barking at their neighbors and the loud warning cries of the males. The latter sounded like pile drivers. The males have a nose about a foot long. The end of this bulbous nose is thrust inside the top of the mouth, air is blown into the nose and down the throat, producing several metallic and resonant snorts every second. These usually have the desired effect of chasing away any designing male intruders. But some males stretch out on the beach to sleep on the rocks and sand or drape themselves over the backs of a number of complaining females. Movement is amazingly rapid in spite of great rolls of blubber and the inability of seals to use their hind legs for locomotion as do sea lions.

This was January, the breeding sea-

son, and a busy time for elephant seals. Males were fighting, mating and protecting harems of about 40 females. Females were quarreling and caring for young.

The adult elephant seal may reach twenty feet in length and weigh 8,000 pounds, but the females rarely exceed ten feet and 2,000 pounds. The young are four feet long at birth, weigh 80 pounds and are covered with dark brown curly hair.

The pups nurse for about two to three months, gaining weight rapidly and losing their black hair to grow the gray brown hair of the adult. After weaning, the pups gather at the edge of the harem, spending time learning to swim and living off their fat till they become skillful in catching squid and fish for food.

The Northern Elephant Seal was almost extinct in the early part of the century but fifty years of protection have resulted in about 15,000 animals scattered on islands from San Miguel to San

Benitos. We saw more seals on San Benitos.

San Benitos is a group of three islands. We landed on the shores of one near a small village of lobster fishermen. It consisted of a half dozen metal and wooden buildings along the shore and nearby cliffs, a volleyball field marked out with stones, a wonderful kitchen mid-dens in the making and three lonely graves on the distant hillside. About two dozen people, three burros and various dogs, chickens and pigs made up the population. The rest of the barren island was given over to cactus, mallow, euphorbia, lichen, birds, seals and sea lions. Cholla cactus was a killer for many birds fly into it at night to remain to die, leaving feathers and bones embedded in the sharp spines.

The island is steep and slippery but we made our way around the elephant seals to watch the clumsy beasts move about the small beaches. Females



Ray Gilmore cleaning scientific specimens



Flukes—as the whale takes a deep dive

Fishing off Guadalupe Island

barked at each other and males snorted out their warnings to visiting males in the bays. Youngsters sucked in their breakfasts and stately seagulls carefully made their way between the bulky bodies to pick up bits of thick milk dropping from the suckling young. Beyond the barren island the silver sea stretched to the horizon, broken by outcroppings of rocks and playful sea lions and seals.

Scammon's lagoon! At dawn we started down the narrow passage and a gray whale suddenly breached from the water before us; head high, it seemed to check the ship and welcome us. Farther into the lagoon whales could be seen in all directions—flippers, flukes, heads, backs, spouts and wildly gyrating mating pairs. We went out in skiffs for a closer look. Too close at one time when a disturbed female swam beneath us. The Japanese call these whales "devil fish" because they often attack boats. All of us were equipped with cam-

eras. First the spout, then the back, then the flukes, in rapid succession. The speed was too much for us and we have a great slide collection of flukes!

Scammon's lagoon is one of the few remaining areas where the gray whale can find refuge during the winter to mate, bear young and care for them till they are ready to migrate back to the waters off Siberia and Kamchatka for the summer.

The California gray whale is a fascinating animal. It is a medium-sized whale about 55 feet in length and about 35 tons in weight. It is without teeth, depending upon baleen to capture its food. About 300 sheets of frayed baleen hang from the mouth to filter food from the water. Feeding is done in the shallow waters of the north in the beds of crustacea called amphipods—animals related to shrimp. The long hours of light allow the whale to feed constantly and four stomachs permit the consumption of large

amounts of food. Excess food is stored as fat, for there is no evidence that the whale feeds during its migration to the south or during its stay there, and it loses half its weight.

Most whales migrate, but only the gray whale travels close to shore. During January and February, it may be seen a mile or so offshore traveling south. The migrating route north is farther at sea.

The young are born in the quiet waters of several lagoons and bays along the coast of Baja California. Mothers support the newly born young on their heads, pushing them up and down in the water till they learn to surface for air. The one-ton youngsters are well cared for by the mother, protected at all times and fed from two mammary glands near the front of the body. These squirt one or two gallons of a cheese-like milk into junior at each feeding.

After six weeks the migration begins. Males wait at the entrance of the lagoons



The biggest!



photos by Gretchen Sibley

Arriving at San Benitos

Bay at San Benitos Islands

and mate with the mothers as they pass. This is an exciting event as the pair gyrate rapidly at the surface of the water, flippers and flukes flying and water splashing as the amorous whales carry on their monstrous love-making, rolling about in the water. Twelve months later, after a journey to Siberia, the developing life will be returned to be born in the waters of its beginnings.

Land around the lagoon revealed many kinds of life. Stony Island is a small, low island covered with sand, minute shells, sandstone rocks sculpted by water and wind, and an array of small plants such as pickleweed, iodine bush, sand verbenas and a dwarfed ocotillo. Shore birds: gulls, curlews, oyster catchers, plovers and many others waded in the shallow water and fly gracefully over island and water, raucous cries piercing the quiet. Osprey build a giant nest for two eggs, the beginning of the breeding season for island birds.

A baby whale floated dead along the shore and Ray Gilmore collected its head for research at the museum.

Great sand dunes stretch for miles along the entrance to the lagoon. Pleasant hours were spent walking along the sandy shore and crossing the dunes where storms have deposited shells, starfish, bones and a great variety of treasures from the sea. Enormous whale bones, the debris of wrecked ships and bags of beautiful shells were all laboriously loaded on the skiffs and carried to the ship to be washed and packed away.

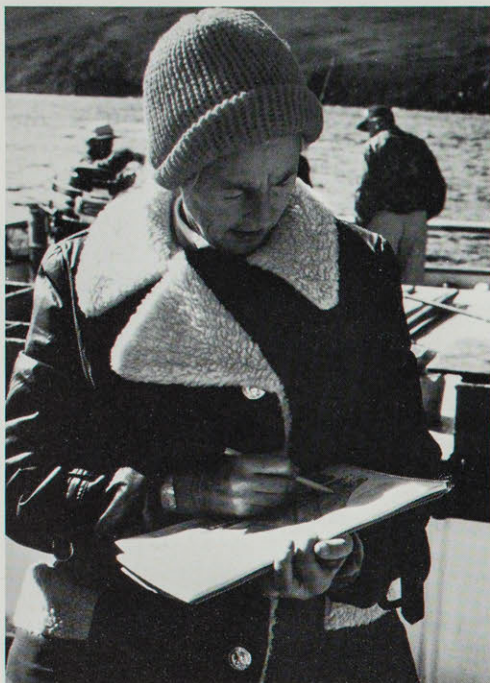
Lazy hours on the ship provided time to fish, read, sew, study, visit and enjoy the beauty of the sea and sky. Skiffs came and went with Alliance members clad in orange life jackets, anxious to find one more shell or one more whale.

The last day was spent at San Martin Island, bird watching, seal watching, plant watching and hiking over rough,

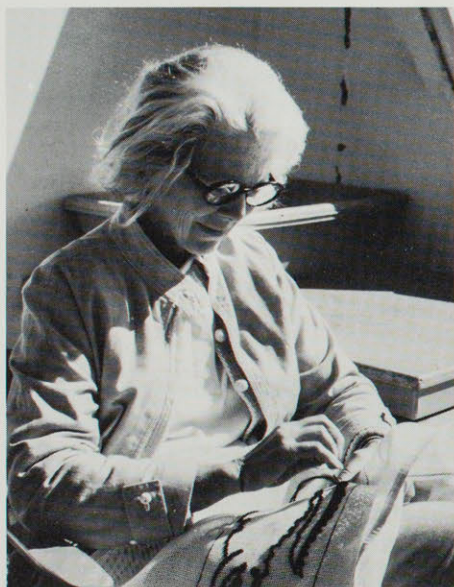
slippery boulders for more treasures of the sea and land.

Seven happy days ended in the rosy sunrise over San Diego harbor and thirty contented Alliance members laden with fish, shells and whale bones reluctantly left the beautiful natural world of Baja.

Gretchen Sibley, Education Specialist of the Natural History Museum of Los Angeles County is the author of numerous books and articles. Her scientific journeys frequently result in lively essays for publication in Terra.



Sketching!



Needlework!

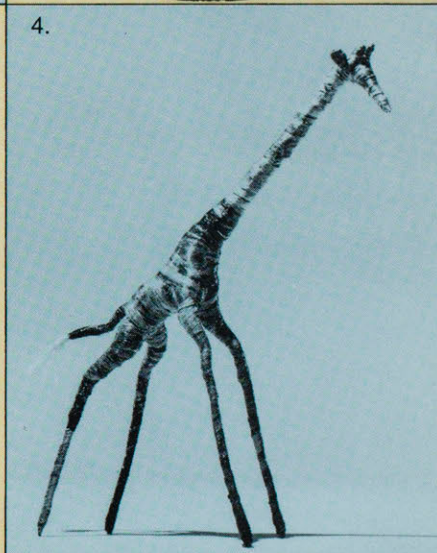
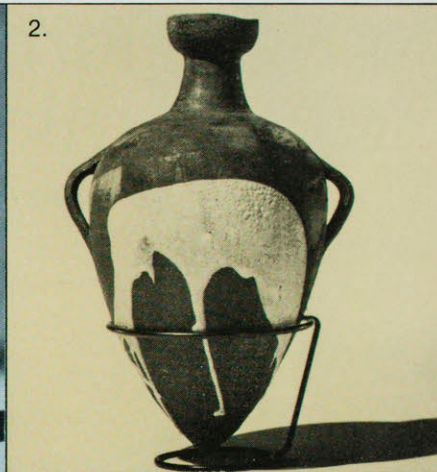


Washing shells

NEW ETHNIC ARTS SHOP

1. American Eskimo Soapstone Carving \$90.00
2. Israeli Vase
Reproduction of Archaeological Finding \$11.00
3. Cinderella—Ural Stone—USSR \$8.00
4. Banana Fibre Giraffe from Kenya \$3.50
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120 years old \$800.00
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Photos by Armando Solis



When the Pollen's in the Air

Allergenic Plants in Southern California

by Robert Gustafson



The arrival of spring is always a much anticipated event. Hillsides burst forth in myriads of color heralding the beginning of a short but spectacular period when the chaparral seemingly comes alive.

For many sensitive individuals, however, it marks the advent of another season of sneezing, scratching, itching and coughing. Pollen lies heavy in the air. Poison oak leaves emerge from their brief period of dormancy. Nettles, fiddlenecks and other "touch-me-nots" grow with amazing speed, nourished by the winter rains. And once again the annual stocks of nasal sprays, balms, lotions and eye-drops are quickly replenished.

Wind-pollinated or anemophilous plants are the worst offenders in contributing to the spring-fall malady known as hayfever. The term originated in England over 100 years ago, since it was believed that nasal stuffiness, sneezing, lacrimation, and the like, were the result of the odor emanating from newly-mown hay. Most of the research done on allergenic pollen grains has centered on those of the ragweed tribe of the sunflower family. Some highly active materials have been extracted from ragweed pollen, but these substances have not been fully assayed. It has been demonstrated that as many as eight different antigens are present in this particular type of pollen.

Treatment for hayfever is accomplished by a method known as hyposensitization. At given intervals measured amounts of highly diluted pollen extract are injected into the individual until he is able to withstand the normal seasonal concentration of pollen with little effect. Generally some residual symptoms will still remain so that complete relief is not probable. Injection of the allergen into the system results in an antigen-antibody reaction thus preventing cellular damage. Antihistamines, normally prescribed for severe hayfever attacks, prevent shock damage usually caused by the release of histamine and like substances.

In Southern California several plants are responsible for this unpleasant and always aggravating indisposition. Burro-weed (*Franseria dumosa*) and greasebush (*Hymenoclea salsola*) contribute significantly to the spring pollen problem, while western ragweed (*Ambrosia psilostachya*) and sandbur (*Franseria acanthicarpa*) are fall culprits. These together with the mugworts and sagebrushes (*Artemisia* sp.), saltbushes (*Atriplex* sp.), California black walnut (*Juglans californica*) and Bermuda and

Johnson grass (*Cynodon dactylon* and *Sorghum halepense*) comprise the list of plants with the heaviest concentration of allergenic atmospheric pollen. The pines which produce an abundance of wind-laden pollen are not considered harmful.

The genus *Ambrosia* is responsible for most of the pollinosis in the United States. Western ragweed is the most abundant species in Southern California with its blooming period beginning in late July and extending through late November. This obnoxious weed is as much at home in vacant lots and sidewalk cracks as it is in open brushy areas. It is a coarse branched perennial with running rootstocks and may attain a foot and a half in height. Burro-weed is abundant in the hot dry deserts east of the mountains where the pollen is brought in copious amounts when the Santa Ana winds blow across the basin. This low rounded shrub with ash-colored foliage and bur-like spiny fruits is one of the common desert dominants. It blooms in spring and again in the fall. A related species, the sand bur, with a wide range extending from the coast to the desert, blooms from August to November compounding the hayfever misery. Our native black walnut, a locally common tree, along with several of the oaks, produces an abundance of pollen in the staminate catkins in the spring. Standing under such a tree in full bloom, one is likely to be covered with a shower of golden dust. Several species of sagebrush and saltbush are abundant over a wide variety of habitats and, depending upon their concentration in a given locale, may contribute significantly to the pollen problem. Greasebush, another desert shrub with resinous filiform leaves, is widely distributed in the washes of both the Colorado and Mohave deserts. Bermuda grass, an introduced pest of orchards, lawns and gardens, makes itself more insidious by shedding allergenic pollen throughout most of the year. Although the above mentioned plants are the primary sources of pollinosis in the southland, one should add the following: dock (*Rumex* sp.), lambsquarters (*Chenopodium album*), plantain (*Plantago* sp.), Russian thistle (*Salsola kali*), pigweed (*Amaranthus retroflexus*), willow (*Salix* sp.), sycamore (*Platanus racemosa*), cottonwood (*Populus fremontii*), olive (*Olea europaea*), and poverty weed (*Iva axillaris*).

Certain pollens contain oleo resins in addition to the water-soluble antigens responsible for the hayfever syndrome.



Rhus diversiloba—"Poison Oak"

21

Tulipa—causes "Tulip Fingers"





Phacelia sp.—causes dermatitis

Primula—causes dermatitis



Sometimes an eczematous dermatitis results from contact with the oleoresin. This condition manifests itself in a subacute eruption on the exposed areas of the skin, and is in no way associated with an individual's sensitivity to the pollinosis caused by the same plants.

Poison oak (*Rhus diversiloba*), an attractive, suberect shrub with three-foliolate leaves that turn a deep red in autumn, is the bane of campers and hikers throughout the foothills and mountains of California. In form it is similar to poison ivy and produces a reaction that is indistinguishable from its eastern counterpart. It is assumed that the toxin present in both plants is closely related, if not identical. A phenolic oily resin, toxicodendrol, present in all the poisonous species of *Rhus*, occurs in the sticky sap of the plant and is exuded upon injury. Urushiol, one of the active components of this resin, is responsible for the dermatitis resulting from touching the plant. Natural immunity, initially present in all persons, is reduced to one level or another by repeated exposure to the toxin. Inflammation begins several hours to days after contact and usually abates in a week or two. Reinfection is common due to carelessness in handling contaminated clothing, pets, hunting and camping equipment, etc. The running blisters do not spread the disease since their content is solely body fluid. However, in serious cases, mucous and alimentary canal membranes may become infected and on occasion result in fatality. Often smoke from brush fires carries leaf particles and volatile oils resulting in ivy poisoning.

The foolish practice of ingesting poison oak leaves to confer immunity may result in catastrophic complications. Pain and swelling in the tongue, cheeks and pharynx ensue, followed later by reddening and edema of the anal region. Gastro-enteritis and diarrhea may develop. The central nervous system becomes disturbed, resulting in stupor, mydriasis, delirium, convulsions and possibly death. Since there is no "cure" for the dermatitis, the treatment is only symptomatic. A number of lotions and creams are available for this purpose.

The nettles, *Urtica holosericea*, a native species, and *U. urens*, naturalized from Europe, have their stems and leaves covered with stinging hairs. Actually these hairs are like fine capillary tubes which are calcified at the base and silicified at the upper end. A spherical tip at the top of the tube breaks off along a predetermined line when the skin

comes into contact with the hair. The sharp edge left after the separation of the tip penetrates the skin, releasing the acrid fluid in the tube into the wound. Among the contents of this rather highly complex fluid are a histamine and an acetylcholine which contribute to the highly irritating property. The inflammatory nature of the juice is dissipated by heat so that nettles become popular boiled vegetables in parts of Europe.

Other native plants which present problems are certain members of the waterleaf family (Hydrophyllaceae). Several species of *Phacelia* and *Wigandia caracasana*, an introduced weed of arboreal proportions, are capable of inducing dermatitis in some individuals. Although the castor bean (*Ricinus communis*) is not indigenous to the United States, it has been naturalized in many areas, especially in Southern California. Contact with the milky sap of the stem and leaves or excessive handling of the mottled seeds may result in an eczematous eruption of the skin. Individuals living in areas where castor bean pomace is made or used often exhibit severe allergic reactions, since the allergen is easily air and windborne. Our native prickly-pears (*Opuntia* sp.) may produce a "sabra" dermatitis, a condition which closely resembles scabies. This is caused by the minute glochids working their way into the skin. *Encelia californica*, a common shrub along the coastal chaparral with yellow daisy-like flowers, has also been reported to cause dermatitis.

Florists and bulb-growers are often victims of an occupational hazard known as "Tulip Fingers" and "Lily Rash." The first is characterized by a tenderness and redness of the fingers which later become thickened and fissured because of an oleoresin present in tulips and hyacinths. The second manifests itself as a skin eruption associated with handling members of the genus *Narcissus*, daffodils and jonquils.

Carpenters, lumberjacks and woodsmen are often afflicted with a wood dermatitis, the most conspicuous being that of poplar (*Populus* sp.) which contains both oleoresins and an irritant glucoside.

Certain plants such as figs (*Ficus carica*), carrots (*Daucus carota*), and celery (*Apium graveolens*) are often responsible for a condition known as photodermatitis wherein the skin becomes hypersensitive to light. About 48 hours after contact with the plant, organic compounds known as furocoumarins, present in the vegetable tissue, react in

combination with long exposure to sunlight to induce an eruption on the skin which subsequently becomes hyperpigmented. This pigmentation may remain for some time after the erythema disappears.

Many horticultural plants have been recognized as sensitizing agents. Chrysanthemums emit both an allergenic pollen and natural occurring insecticide, pyrethrin, capable of producing severe dermatitis. Algerian ivy, *Hedera canariensis*, presents a picture identical to poisoning from poison ivy. Housewives and greenhouse workers may exhibit extreme sensitivity to contact with the household philodendron (*Philodendron cordatum* of the trade) and dumbcane (*Diffenbachia*). Children are often victims of dermatitis caused by oleander (*Nerium oleander*) as well as poisoning from ingestion of the leaves or flowers. Silk-oak, *Grevillea robusta*, rice-paper plant (*Tetrapanax papyrifer*), primrose (*Primula* sp.), poinsettia (*Euphorbia pulcherrima*), and ginkgo (*Ginkgo biloba*), to mention a few, are all plants with well-documented histories of allergic responses. Agricultural workers sometimes fall prey to skin eruptions from handling the vegetables they tend: hops (*Humulus lupulus*—"hop-picker's itch"), tomatoes (*Lycopersicon esculentum*), potatoes (*Solanum tuberosum*), and garlic (*Allium sativum*).

It would appear that our hillsides and gardens are plagued with plant "traps," lying in wait for the unwary individual. Learning to recognize the most troublesome members of the "touch and scratch" syndrome will undoubtedly lessen one's chances for infection. The list of allergenic plants is a long one. More often than not one man's prize chrysanthemum patch may well be his poor wife's "incurable" skin rash. Allergies are both complex and fascinating subjects of research but their cause, prevention and cure lie in the future.

Robert Gustafson, Curatorial Assistant of Botany at the Natural History Museum, began working at the Museum in 1962 as a student worker while attending UCLA. His main interest is working with and photographing flora of the southwestern United States. This is his second article for Terra.

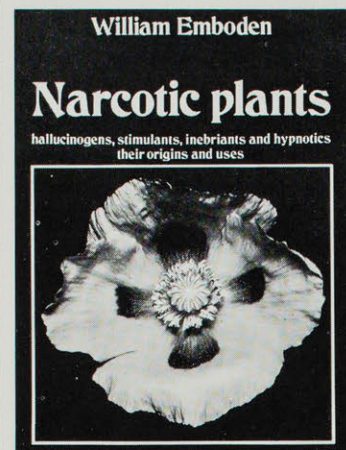


Franseria acanthicarpa—
"Sand-Bur"



Juglans californica—"California
Walnut"

Book Review



NARCOTIC PLANTS, William Emboden
Macmillan, 168 pages, \$12.95

Regular readers of *TERRA* may experience a feeling of *déjà vu* upon first dipping into this handsome volume. Mr. Emboden's articles on ethnobotanical subjects, including some on narcotic plants, have been highlights in many issues of our magazine. His newly published book extends and expands this coverage in a fascinating manner.

Dividing his material into hallucinogens, stimulants, inebriants, tobaccos, snuffs and hypnotics, Mr. Emboden has written a historical, botanical and chemical survey encompassing thousands of years and every section of the world. His text is supplemented by many color photos and illustrations, line drawings, wood cuts, scholarly appendices and a bibliography for the scientifically sophisticated reader.

To this subject with all its passionate partisanship and potentially morbid appeal, Mr. Emboden brings cool scientific detachment and the ability to impart encyclopedic amounts of information with clarity and wit. While making no judgments pro or con, he lets us know precisely what is fact and what is fantasy in the complex world of narcotic plants and the products derived from them.

It seems there has never been a time since the beginning of recorded history when someone, somewhere, wasn't plucking, distilling, stewing, straining, smoking or just plain eating plants. The results sought for have ranged from medicinal and hallucinogenic to magico-religious. It's rather comforting to one's sense of human continuity that these are the same results today's avid experimenters hope to achieve.

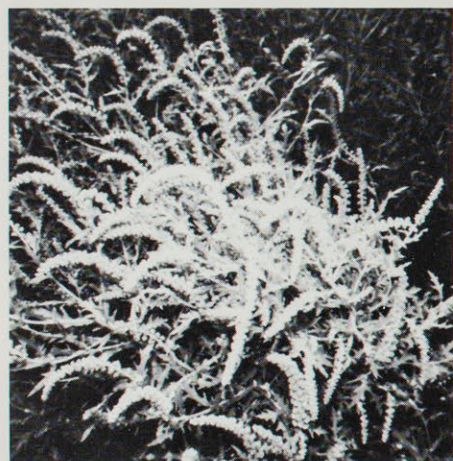
Mr. Emboden's book has given this layman reviewer a new respect for the green things around him and the wonders that lie beneath the innocent flower petal and the beguiling leafy surface.

There's a whole world of mystery out there in the backyard. If you don't believe me, read the book!

Harry J. Pack



Wigandia caracasana—causes dermatitis

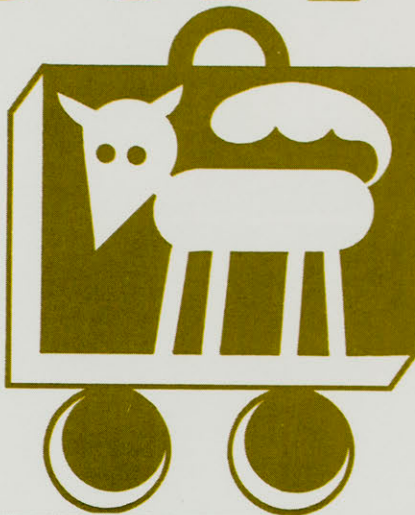


Ambrosia psilostachya—
"Western Ragweed"



Urtica holosericea—"Stinging Nettle"

Burrowing to Borrow



by Kilbee Brittain

25

Renting a coyote remains one of my happiest moments of life in Los Angeles. Not that renting a brown skunk or a baby armadillo or a two-toed sloth might not have been happy, too, but the coyote was perfect for showing the fourth grade what they might see in Joshua Tree or Anza Borrego or Palm Springs, if their parents would take them out of the swimming pools and into the canyons.

Although coyotes still vocalize in the Santa Monica Mountains, probably only a handful of Los Angeles schoolchildren have ever seen one. Much less an armadillo and a sloth.

The beautiful business of the Natural History Museum's Lending Service is to rent to any County resident his choice of animals and historical objects for a two-week period. The Lending Service is part of the Division of Education,

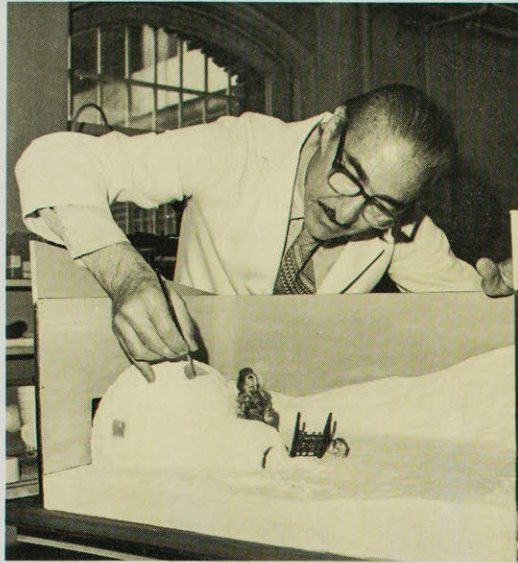
which provides the Museum school touring and docent program, the Natural Science Workshop for talented teenagers, the History Seminar, the chamber music series, the documentary film series, the Museum calendar and brochures, and countless special programs.

When I first approached the red-brown-brick Education wing, my mission was to find something connecting with sixth-grade South American studies and fourth-grade desert studies for my children's school. Pushing through the heavy doors, I came into a favorite kind of wonderland: to the right, a long corridor lined with case upon case of mammals, birds, and reptiles; and to the left, a large long room crammed with historical models, bones from La Brea, shells, insect cases, posters, and slides.

I found the sloth in a moment; the

trouble was that I also found a brilliant red-and-blue macaw, a jaguarundi, a ring-tailed cat, an ocelot, and an emerald green Amazon parrot, all of which would have fitted my south-of-the-border assignment. But I could not take them all. The Lending Service has some rules (otherwise, it would be cleaned out in a day, it's so good) that the borrower may check out one mammal, or one item with a red corner on the box (meaning that the specimen is extra large or beautiful or valuable or popular or realistic in its setting), and three other animal specimens. Then you may rent four historical objects and twenty slides. It is agonizing to have to choose among such handsome animals. Maybe the rule is a come-on to get you back for more as fast as you can.

These old halls overflowing with the



David Ernstein adds detail to igloo scene



Peggy Kayser gives bobcat a facial before moving him to new habitat

animal kingdom and the works of man are open Tuesday through Friday from three to five, and on Saturdays from ten to three, except for Christmas and summer vacations. A September to June rental card costs three dollars (the best buy in town, aside from Museum membership). Every two weeks you may return one set of loans and check out some more. I happily admit to spending more than my necessary choosing time in burrowing, looking, learning, reveling in the abundance of beauties and curiosities.

The Lending Service operates so casually when on public view that you don't even realize you're obeying the rules. The people you meet as you lug a large badger or a model of a mission up to the rental desk are deceptively low-keyed. Would you like a copy of the lending rules? Would you sign here

please? Would you like a parking token? Peggy Kayser and David Ernstein seem entirely at your service, nothing on their minds but you; they are friendly and firm. They also happen to be the people who create a good part of what you are about to rent.

Peggy Kayser is the Deputy Director of the Lending Service and preparator of the vertebrate displays. She is the kind of girl you expect a newspaper to photograph at the beach on the first day of spring, enjoying the sun with a shining smile. The sun in her Museum life seems to be her laboratory, where she prepares animals for display and rental.

The preparator described her work with obvious relish. Sitting on a stool by a wooden table covered with tagged bodies of birds, a squirrel, a bobcat, a gila monster staring at a pile of slides,

and two volumes of the definitive Walker's *Mammals* next to a jar of Glu-Bird, she was arranging ten small lizards in a circle as if they were having a meeting. "I collected these in the desert," she said, "and then I freeze-dried them."

Remembering a beloved Jackson's chameleon that had stayed in our kitchen freezer for some weeks after its untimely end, I asked Kayser just which freezer she was referring to. Having assured me that the freezer was not the one in the Museum cafeteria but rather a special one in a Museum laboratory, Kayser described the freeze-drying process as one by which all moisture is gradually removed from a body. "We weigh the specimen every few days to see how much water-weight it has lost. When weight loss stops, the process is finished. It's an ideal way of preserving



Sabre-tooth cat skull



Iguana

small animals like lizards. The preservation is permanent, unless the specimen gets wet, and preparation time is quite short. I arrange the specimen in the desired position, and leave it in the freezer," she explained. The result is life-like, not like the lacquered Disneyland of reptile preservation of the past.

Larger animals present more complicated problems and would take much too long to freeze-dry. One taxidermic process involves skinning the specimen and making a neoprene mold of the body, which has already been positioned. The insides of the hides are dusted with arsenic, or preferably boric acid, which does not poison the preparator. Arsenic is highly toxic; the giraffe near the Lending Service desk sports a sign, "Don't touch. Hide has arsenic."

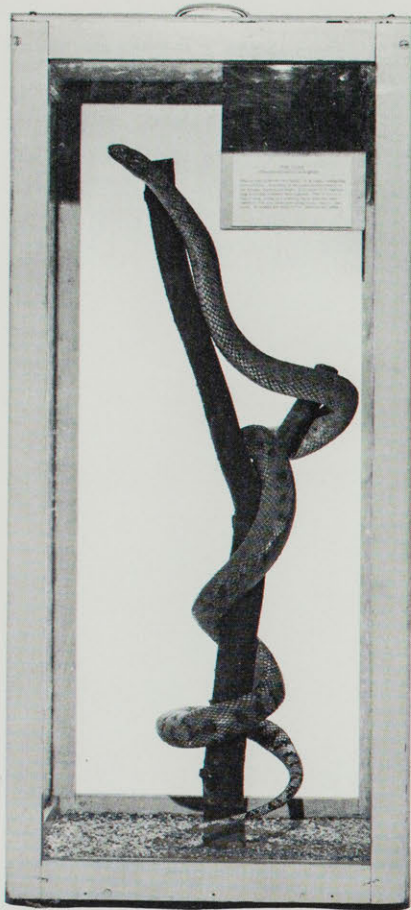
Skins are sent to a professional tanner. Otherwise, they would have an odor and in short order would decompose. The tanned skin is stretched over the mold. Finally, the preparator chooses eyes for the specimen from a catalogue devoted to taxidermists' animal glass eye collections.

Thinking of the question I was asked the first day I unloaded the sloth at school—"Did you kill it?"—I asked Kayser how she came by the specimens to be mounted.

"We find the animals in a variety of ways," she said. "I have a wolf body in the freezer right now. Remember the wolf that had to be killed last Christmas time? He was killing pet dogs in a south Los Angeles suburb. Apparently he was a pet—he had a collar—but the owner never identified himself because keeping

a wolf as a city pet is against the law. When I read the paper that morning, I called the Department of Animal Regulation and asked if the Museum might have the body. They said, 'Yes, but we'll have to keep the head to check the brain for rabies.' I asked them to be careful with the head, but the instructions went astray. In checking for rabies, investigators remove part of the skull and look for little black spots in the brain tissue. The head was wrecked. So now we have a beautiful wolf body; do you know the whereabouts of a wolf head?" I admitted I wouldn't know where to begin to look.

"One good thing besides the wolf body came out of it all," Kayser said with satisfaction. "I became friends with the animal control people, and now they call me when they have an interesting specimen. Right now I'm working on a Japa-



Pine snake



Skunk

nese monkey called a macaque they gave me. It had 'reverted' and began to bite its owners, so at their request the Animal Regulation Department picked it up and had it put to sleep. As soon as they phoned me an offer of the monkey, I drove to Downey and picked it up in a plastic bag and brought it here."

"We're like the Indians," Kayser continued. "We use all of the body. A preparator from another department boiled the flesh off the macaque's bones and is practicing making a skeletal display."

Sometimes the Lending Service falls heir to displays from other parts of the Museum, in which case Kayser creates a new habitat for the specimen. "Creating a habitat is important to the display and interesting for the preparator," she said. "Some of the older displays don't have the realistic settings we can create

now." She pointed out the handsome bobcat for which she is making a new habitat.

In the creative clutter of the preparator's table lay a bunch of dried wild grasses. "Frances Runyon, the botanical illustrator whose work has appeared in the Museum, brought me these," Kayser said, "and whenever I am out in the country, I collect specimens of plants and rocks."

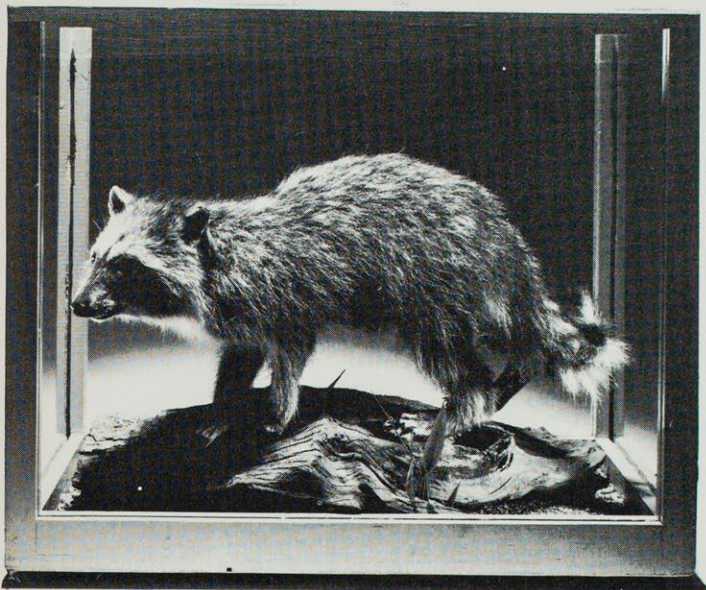
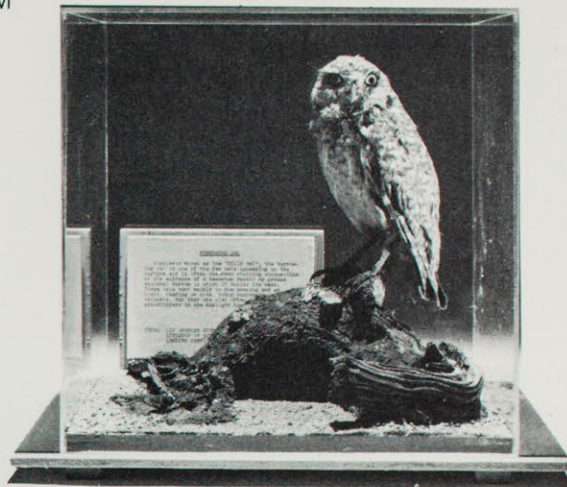
Her concern for habitat is quite evident in the newer displays in the long hall, many of which she has made during her three years at the Museum. A bird perches precariously over four speckled eggs cuddled in her nest; a tern bends among the rocks to pinch an insect in its beak; an iguana wraps five fingers around a branch; a California whiptail lizard stands on the verge of flight some-

what camouflaged by grasses and flowers; an ocelot stands on a thick branch; a beaver pauses in mid-gnaw, toothmarks visible on the chunk of wood nearby; a coyote, smug in his generations-old knowledge of city folks, sits in sand and rock and brush, alert, smiling, secure—so real that a dog we know, after growling a bit, sat in silent consternation one evening staring at the canine intruder we had rented.

These exhibits are life, frozen in a characteristic moment, ready to breathe and dash away.

The making of historical models requires equal imagination and ingenuity as well as accurate research. At his end of the preparators' laboratory, with cupboards stuffed with Colonial and Mexican materials and retired mules for extra carretas, David Ernstein was working on

Burrowing owl



Raccoon



Grey fox

an Eskimo scene. On an icy field rested an igloo, part cut away so the inside could be seen, filled with objects to scale: cooking utensils, snowshoes, weapons, furs.

"Schools began requesting an Eskimo exhibit," ErNSTEIN explained, "so I decided to make several of them, starting with styrofoam which I cut, paint, and draw on to make the igloo ice blocks. Styrofoam is easy to work with, and light; that's important, having an exhibit light enough for a teacher to carry around."

I marvelled at ErNSTEIN's use of ordinary materials to create the illusion of reality and spaciousness. "Is there a school for model makers?" I asked. "I learned by doing," ErNSTEIN replied. "Thirty years ago I came to Hollywood from Ohio, where I was a cellist (I still play with chamber music quartets), and

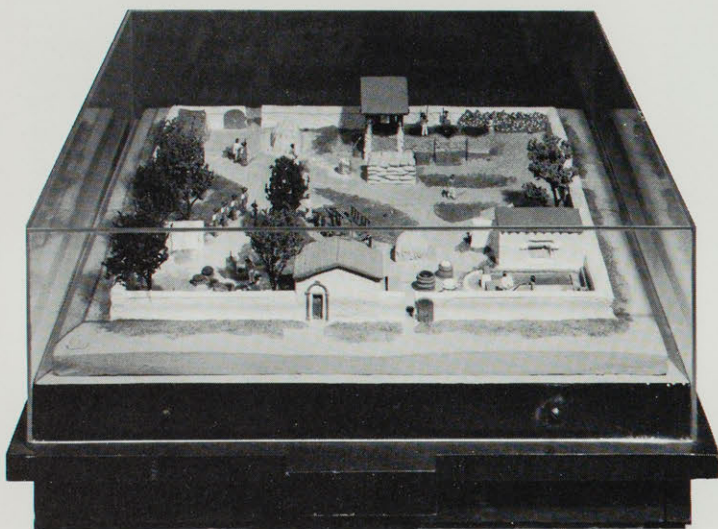
found myself making models for Warner Brothers' sets. Everything had to be precisely to scale so that the set designers could build accurately. After some years, I came to the Museum."

As he talked, ErNSTEIN's fingers molded a small clay figure for the Eskimo scene, to accompany the Eskimo hunter, spear in hand. The spear, ErNSTEIN explained, is made of a stick, painted and wrapped with colored threads. The furs are bits of rabbit skin.

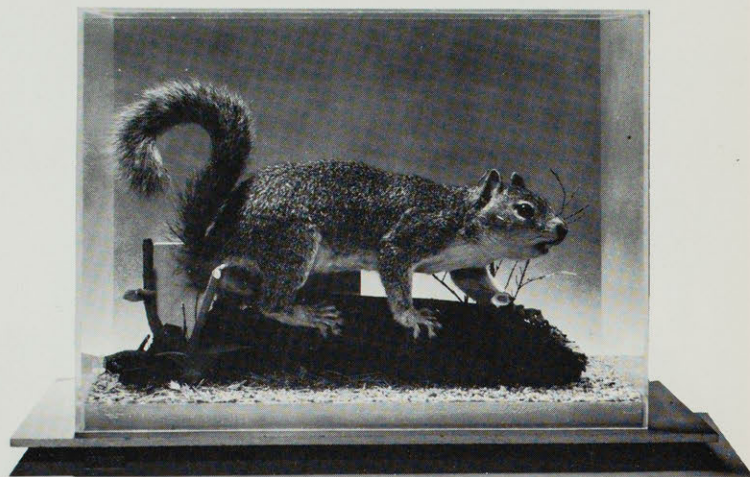
ErNSTEIN's evident enjoyment in his work shows in his conversation as well as his careful, creative attention to detail. One of the newer models, an imaginative recreation of the La Brea scene in Pleistocene times, shows the tar pits engulfed in grasses and trees, with sabre-tooth cats, sloths, and camels milling about, with the rapacious teratormis waiting on

a branch above. In the fore-shortened background loom the Hollywood Hills, quite recognizable in outline. The model radiates a charm, an attractiveness, that is a magnet for the young observer, instead of the possible sinister aura of ancient dying. ErNSTEIN remarked gently, "Children's imaginations aren't measured by a ruler. That's a fine thing about art; poetic license improves the effect of this kind of model."

The La Brea model is so popular that I saw it free for rental only once during the year. ErNSTEIN explained that if there is only one of any model, it is almost always checked out. He tries to make several models of the most popular scenes, like igloos or the dome-shaped house of twigs and reeds the Indians called a wickiup, with steam house nearby.



Mission San Gabriel
yard—detail



Ground squirrel

So that children may learn as well as enjoy, the Lending Service historical objects have explanatory material attached. The background information does not intrude on the scene itself; most models have a drawer of information attached, which can be pulled out and set up in a bracket on the box.

Although most items may be checked out for only two weeks, three hundred objects have been rented for the entire year to each of twenty-four school districts, many of which are too far away for two-week returns. Yet there is a huge number of materials the Lending Service offers: fifty thousand pictures, five thousand slides, and five thousand three-dimensional objects, like armadillos or metates. A year ago the Lending Service drew one thousand and sixty-six borrowers from four hundred and thirty-two

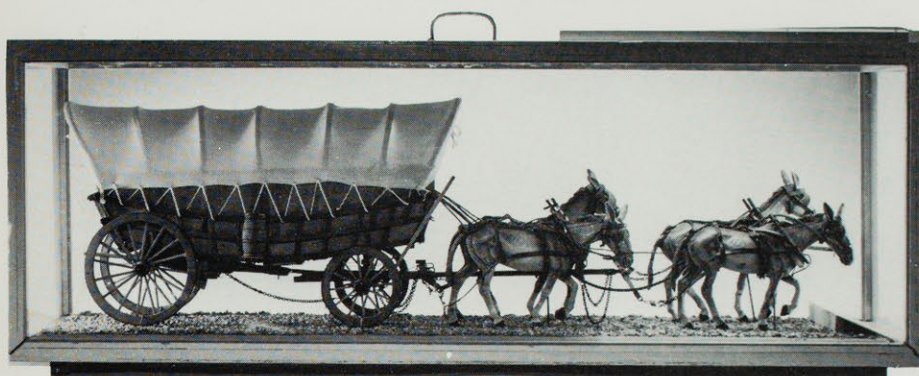
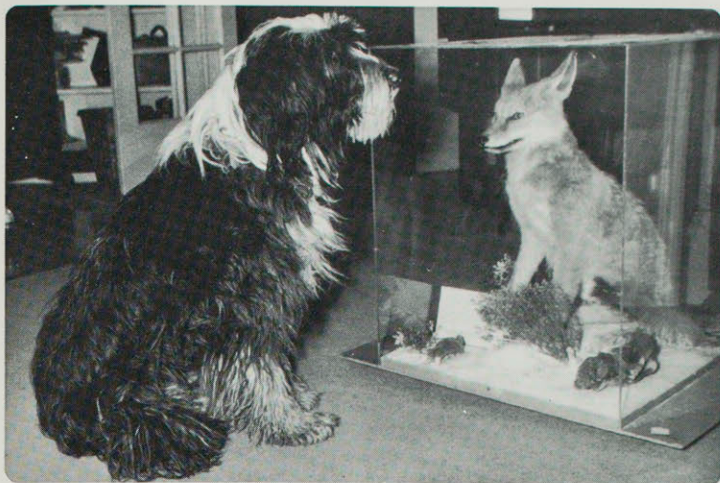
schools and organizations on three thousand and fifty-eight occasions—a thirty-five percent increase in use over the previous year. About three-fourths of the schools are grade schools.

Since September this borrower has rented one hundred forty displays during fifteen visits. Choosing a balanced but interesting diet for a school requires some improvisation—the bobcat you wanted to rent may be already checked out—but the process makes for a happy half hour. Should you choose something for each class? Or a unified collection for one class? Should you take the La Brea model this time because it's always checked out, even though the third grade won't be studying La Brea for two more months? Should you take a baby duck for the kindergarten because they will love it so, even though that means

the desert unit won't get its Gambel's quail this time?

If you are a room mother checking out items for only one class, decisions are a bit easier. For a sixth-grade Latin American unit, for instance, you could rent, within the Lending Service rules, an ocelot, two birds, one reptile, a stone corn-grinding bowl, a mask, a spear, and a model of a South American in costume. All you need are a few afternoon moments, a large enough car, and some muscle.

Driving to school with some recent trophies, with that beautiful coyote sitting beside me in the front seat, a sabre-tooth cat skull grinning out the back window (my car was almost rammed by an astonished driver), and spears, baskets, skeletons, shells, and bugs crowded into the rest of the station



Conestoga wagon

wagon, I thought it would be a good idea to write the Lending Service this note, telling them what fun it's been.

Cockateel



Kilbee Brittain is an animal fan, as this article and her activity as Los Angeles Zoo docent indicate, although her Ph.D. was in English Literature. She enjoys working with the Museum Alliance and with the schools the Brittains' four children attend. This is her first article for Terra.

continued from page 2

quite an introduction to see a 35 ton beast leap and completely clear the water. All this to a background of white sand dunes as far as the eye could see.

Because of the constantly changing sand bars, our ship was cautiously led into the Lagoon by a small boat with a depth finder.

The whales were abundant for watching in this vast expanse of shallow water with nearly continuous showing of spouts, of silhouettes of surfacing adults and cows with calves and great tail flukes disappearing into the water.

Overhead skies always cleared by the happy hour when we gathered before lunch to exchange experiences of the morning and make plans for a busy afternoon. Some went shelling on Stony Island, giving Gretchen Sibley her first plates full of shells to identify and put out for examining.

Anchoring off the dunes sent everyone beachcombing except the cook. Shipmates returned with everything from the section of the stern of a ship that had burned on a reef to the bleached bones of a whale skeleton partially buried on the beach.

The younger and more adventuresome tramped further back in the dunes, probably feeling like Lawrence of Arabia and returning with sacks of treasure. It looked like time to leave when the after-deck became a maze of flotsam and jetsam. Close watch was being kept on hoarded boxes of shells.

The next morning we were approaching a new island, San Martin, with its not so colorful fishing shacks. It was interesting to us that these fishermen were not independent operators just living on these islands, but were put ashore by the large Mexican companies by whom they were paid.

Everyone enjoyed following Ken on the bird-watching trek around the island, even the ones unfortunate enough to tangle with the cactus. It was really a visit to the sea lion colonies with a pause to watch some lobster fishermen standing on the boats heading back to the village with their cargo of traps. There were seals on the rocks enjoying the waters of the pretty little bays.

That was our last day, and in the gray light of the next morning came the rattle of anchor chains and the pink skyline of San Diego.

Because of this trip, Alliance shipmates now realize the significance of the annual migration of the California gray whale.

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